

Name: _____

Date: _____

Algebra 1A Pd: ____

Unit 5 (Exponents, Scientific Notation) Practice Test
NO CALCULATORS!

Part One: Exponential Simplification: Please simplify each expression COMPLETELY.

1. $(x^2)(x^4)$	2. $(a^4)(a^{-3})$
3. $(14g^3h^3k^{90})^0$	4. $(3h^5)^{-1}$
5. $\frac{-r^{-3}s^5t^{-3}}{r^5s^{-8}t^5}$	6. $(a^4b^0c^{-3})^2$
7. $(2d^4e^9f^6)(4d^3e^2f)^2$	8. $(5a^2b^{-3}c^4)(3a^5b^9c^{-12})$

Part Two: Algebraic Sentences: Please answer each question in complete sentences using algebraic terms. Echo the prompt and avoid vague words.

9. What is the difference between multiplying two powers and raising a power to a power? Explain as clearly and concisely as possible. Using a specific example may help your explanation.

10. When and why might an astronomer use scientific notation?

11. Explain how you would write five millionths in proper scientific notation.

Part Three: Scientific Notation

12. Write each number in proper scientific notation.

a. 0.0000302 _____

b. 400,000,000,000 _____

c. 22 _____

d. 560×10^{-9} _____

e. 0.045×10^3 _____

13. Write each number in standard notation.

a. 2.2×10^{-6} _____

b. 4.2×10^{10} _____

c. 7.023×10^3 _____

d. 1.9×10^0 _____

e. 3.965×10^{-5} _____

14. Write each number in proper scientific notation. Then, order from least to greatest by writing 1-4 on the smaller lines (1 is the smallest number, 4 the largest).

0.62×10^{-2} _____

620×10^{-7} _____

6.3×10^0 _____

6.2×10^2 _____

Part Four on next page...

Part Four: Word Problem: You may use a calculator.

15. The distance from Earth to Neptune is two billion, seven hundred million miles when both planets line up on the same side of the sun. A spacecraft travels at a speed of nine thousand miles per hour.

a. Write the distance in standard notation. _____

b. Write the distance in proper scientific notation. _____

c. Write the speed in standard notation. _____

d. Write the speed in proper scientific notation. _____

e. In how many hours would the spacecraft reach Neptune after leaving Earth? Show your work and write your answer in proper scientific notation.